

University of Groningen

## The effect of prophylactic cranial irradiation (PCI) for young stage III NSCLC patients

Witlox, W J A; Ramaekers, B; Groen, H J M; Dingemans, A-M C; Praag, J; Belderbos, J; Van der Noort, V; Van Tinteren, H; Joore, M A; De Ruyscher, D

*Published in:*  
Annals of Oncology

*DOI:*  
[10.1093/annonc/mdz067.003](https://doi.org/10.1093/annonc/mdz067.003)

**IMPORTANT NOTE:** You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2019

[Link to publication in University of Groningen/UMCG research database](#)

### *Citation for published version (APA):*

Witlox, W. J. A., Ramaekers, B., Groen, H. J. M., Dingemans, A-M. C., Praag, J., Belderbos, J., Van der Noort, V., Van Tinteren, H., Joore, M. A., & De Ruyscher, D. (2019). The effect of prophylactic cranial irradiation (PCI) for young stage III NSCLC patients: Subgroup analyses of the NVALT-11/DLCRG-02 study. *Annals of Oncology*, 30(Suppl 2), 33-34. <https://doi.org/10.1093/annonc/mdz067.003>

### **Copyright**

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

### **Take-down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

# 860 The effect of prophylactic cranial irradiation (PCI) for young stage III NSCLC patients: Subgroup analyses of the NVALT-11/DLCRG-02 study

W.J.A. Witlox<sup>1</sup>, B. Ramaekers<sup>1</sup>, H.J.M. Groen<sup>2</sup>, A.-M.C. Dingemans<sup>3</sup>, J. Praag<sup>4</sup>, J. Belderbos<sup>5</sup>, V. Van der Noort<sup>6</sup>, H. Van Tinteren<sup>6</sup>, M.A. Joore<sup>1</sup>, D. De Ruyscher<sup>7</sup>

<sup>1</sup>Clinical Epidemiology and Medical Technology Assessment, Maastricht University Medical Center (MUMC), Maastricht, Netherlands, <sup>2</sup>University Hospital Groningen (UMCG), Groningen, Netherlands, <sup>3</sup>Pulmonology, Maastricht University Medical Center (MUMC), Maastricht, Netherlands, <sup>4</sup>Department of Radiation Oncology, Erasmus University Medical Center, Rotterdam, Netherlands, <sup>5</sup>The Netherlands Cancer Institute Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands, <sup>6</sup>Department of Biometrics, Het Nederlands Kanker Instituut Antoni van Leeuwenhoek (NKI-AVL), Amsterdam, Netherlands, <sup>7</sup>Radiation Oncology (Maastricht Clinic), Maastricht University Medical Centre (MUMC)-MAASTRO Clinic, Maastricht, Netherlands

**Background:** The NVALT-11/DLCRG-02 phase III study compared PCI to observation after chemo-radiotherapy (RT) for stage III NSCLC and showed a significant decrease in the cumulative incidence of symptomatic brain metastases (BM) in the PCI arm at two years (7% vs 27% [HR 0.23]). We here performed exploratory subgroup analyses.

**Methods:** Two year cumulative incidence rates were calculated and competing risk regression, with death of any cause as competing risk, was used to examine the time to symptomatic BM in the following subgroups: age, gender, performance status, disease stage and tumour type, prior surgery, chemotherapy cycles, thoracic RT dose and total concurrent chemo-RT treatment time. For continuous variables, the median was used as a cut-off value. The effect of PCI was only examined if the initial result was significant.

**Results:** In total, 174 patients were analysed. The symptomatic BM incidence was significantly lower in the subgroup of older (>61 years) versus younger (= <61 years) patients (7% vs 26% [HR 0.25]). Stratified by age, PCI only significantly reduced the symptomatic BM incidence in younger patients (9% vs 42% [HR 0.18])(Table).

**Table: 860 Time to symptomatic BM per subgroup**

Subgroup		Hazard ratio	95% CI
Age (>61 years vs ≤ 61 years)	All	0.25	0.10 - 0.60
	≤61 PCI vs observation	0.18	0.06 - 0.53
	>61 PCI vs observation	0.47	0.09 - 2.52
Female vs Male		1.31	0.92 - 1.88
WHO performance status	0	–	–
	1	0.86	0.41 - 1.83
	2	2.12	0.59 - 7.63
Squamous vs non-squamous		0.76	0.34 - 1.66
Stage IIb vs IIIa		0.97	0.47 - 1.98
Prior vs no prior surgery		1.21	0.45 - 3.29
Chemotherapy cycles (>3 vs ≤ 3)		0.97	0.42 - 2.22
Thoracic RT dose (>60 Gy vs ≤ 60 Gy)		1.15	0.57 - 2.36
Total concurrent chemo-RT time (>64 days vs ≤ 64 days)		1.43	0.70 - 2.94

**Conclusions:** The symptomatic BM incidence was significantly lower in older (>61 years) compared to younger (= <61 years) patients, likely due to higher numbers of adenocarcinoma in the younger patients group. The effect of PCI was only significant in younger patients. This study was randomized based on treatment allocation and subgroups might be too small to detect significant differences. Therefore, our results are hypothesis generating and should be prospectively tested.

**Clinical trial identification:** NCT01282437.

**Legal entity responsible for the study:** Nederlandse Vereniging van Artsen voor Longziekten en Tuberculose (NVALT).

**Funding:** Has not received any funding.

**Disclosure:** All authors have declared no conflicts of interest.